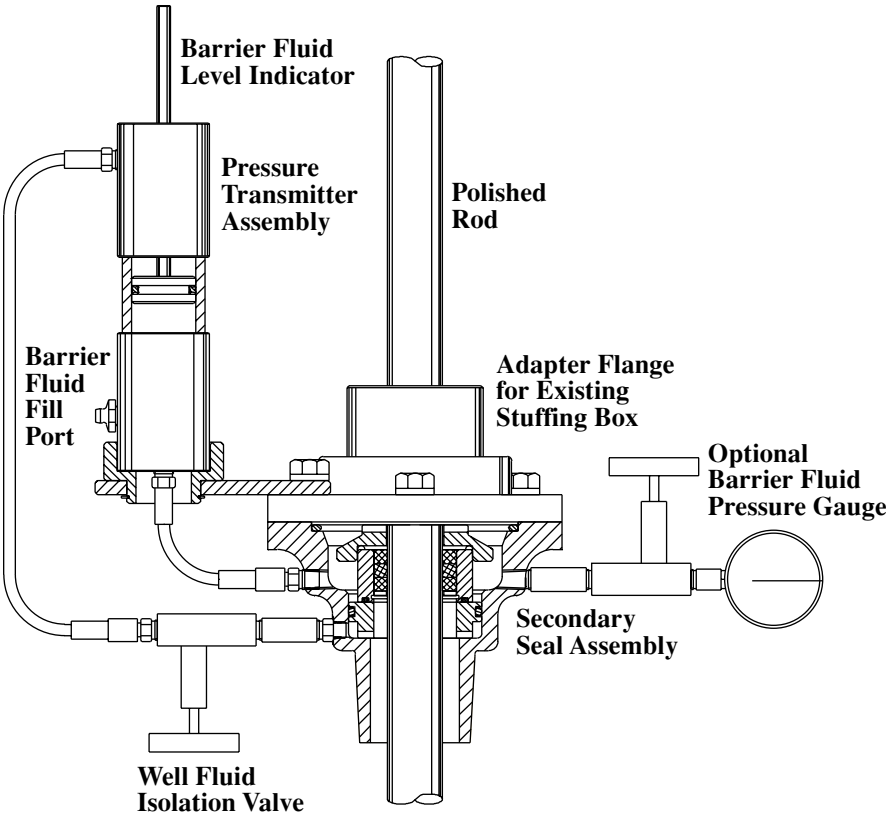
Reciprocating Rod Pump Seal Assembly

New Technology Controls Leakage at the Wellhead to Prevent Pollution and Increase Production

Environmental contamination is a primary concern for oil and gas producers. Spills and leaks of produced well fluids can contaminate soil, resulting in costly cleanup. In addition, the leaked oil or gas is lost production. If these conditions persist undetected, the economics of the well are severely impacted. Leaks or spills are often the result of stuffing box seal wear, worn packing, or rod friction.

The Palmour Group, with the aid of a grant from the Department of Energy's Inventions and Innovation Program, developed the Hydro-Balanced Stuffing Box seal system to solve the problems associated with spills and leaks around the polished rod in oil and gas pumping well installations. Barrier Fluid Technologies has been licensed by the Palmour Group to continue the development and marketing of this system. The hydro-balanced concept isolates the well fluid from the primary seal with the placement of a secondary seal This chamber is then filled with a biodegradable fluid and pressurized to flow line pressure, thereby balancing the pressure across the secondary seal. When the primary seal wears sufficiently to leak, only the biodegradable fluid can reach the atmosphere.

The new seal system provides lubrication to the pumping rod, allowing lower temperature operation, extending the life of the packing elements, and reducing the energy demand for the pump motor. The system is available for use with reciprocating sucker rod pumping systems. The Hydro-Balanced Stuffing Box can be installed on new wells or retrofit to existing wells.



Hydro-Balanced Stuffing Box

Overview

- Developed by the Palmour Group
- A more economical and retrofit friendly design has been developed by Barrier Fluid Technologies
- Multiple units installed and operating
- Commercialized in 1998

Applications

Rod pumped wells

Capabilities

- Eliminates loss of well fluids from leaking rod pump seals.
- Operates at lower temperature and reduces friction between the rod and packing.
- Available for new wells or can be retro-fit to existing wells.

Benefits

- Eliminates loss of well fluids from leaking rod pump seals, thereby controlling pollution at the wellhead.
- Prevents loss of production from leakage.
- Reduces energy costs by operating at lower temperatures and decreasing friction between the rod and packing.
- Reduces maintenance costs by extending the service life of the packing and polished rod.
- Eliminates the potential cost of environmental cleanup from leaks and spills.

Contact: Barrier Fluid Technologies - **Randy Busch** - (830) 833-0908 - rbusch@moment.net